IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Chaudhary	Group Art Unit: 1635
Serial No. 09/490,187	Examiner: McGarry, S.
Filed: January 23, 2000	Attorney Docket No. UTSD:0680
For: *Gene Expression in Ectodermal Dysplasia*	

DECLARATION UNDER RULE 132

I, Richard Gaynor, M.D., declare and state as follows:

1. I am a Professor in the Departments of Internal Medicine and Microbiology at the University of Texas Southwestern Medical Center. The Board of Regents, the University of Texas System is the assignees of this application. I am an expert in the field of detecting and regulating gene expression and have authored numerous publications in this field. I have read and am familiar with the contents of the above application and the Office Action mailed 9/28/00.

2. The claims make reference to a "*human* TAJ gene or gene product." The murine and human TAJ genes and corresponding gene products are known in the art (Specification, p.1, lines 21-22). Furthermore, the present specification expressly recites the nucleotide and amino acid sequences of the full-length human TAJ protein and its native coding sequence (SEQ ID NOS:2 and 1, respectively). The human TAJ gene or gene product subject to detection or modulation may be a mutation of the disclosed wild-type TAJ sequence (Specification p.3, line 16 - p. 4, line 3), and it is the disclosed wild-type sequences that are used to detect or modulate such mutants (Specification p.4, line 31 - p.6, line 2; p.7, line 21 - p.8, line 18; see also Examples IV, V and VI). Accordingly, in my expert opinion, the specification provides those of ordinary skill in the art with a definite, clear understanding of what is encompassed by the recitation of "a human TAJ gene or gene product."

3. The claims require detecting (or modulating the functional expression of) a human TAJ gene or gene product. The murine and human TAJ genes and corresponding gene products are known in the art (Specification, p.1, lines 21-22). Furthermore, the present specification expressly recites the nucleotide and amino acid sequences of the full-length human TAJ protein

and its native coding sequence (SEQ ID NOS:2 and 1, respectively). Hence, the human TAJ gene or gene product subject to detection or modulation may be a mutation of the disclosed wild-type TAJ sequence (Specification p.3, line 16 - p. 4, line 3) and it is the disclosed wild-type sequences that are used to detect or modulate such mutants (Specification p.4, line 31 - p.6, line 2; p.7, line 21 - p.8, line 18; see also Examples IV, V and VI). Accordingly, in my expert opinion, the steps of the claimed method are clearly described in the specification to reasonably convey to one of ordinary skill in the art that the inventors, at the time the application was filed, had possession of the claimed invention, particularly the claimed methods for detecting (or modulating the functional expression of) a "human TAJ gene or gene product."

4. The TAJ detecting claims, as claim 1, require (a) detecting the presence of a human TAJ gene or gene product in a cell; and (b) correlating the presence of the TAJ gene or gene product with a presence of or predisposition to an ectodermal disorder.

The specification thoroughly teaches and exemplifies the method defined by these steps, readily enabling one of ordinary skill in the art to practice the method as claimed without undue experimentation. For step (a), the specification describes a variety of suitable detection methodologies (p.4, lines 9-28; p.6, lines 3-13), teaches a large panel of exemplary TAJ specific probes (allele-specific antibodies and hybridization probes; p.4, line 31 - p.6, line 2), and provides detailed exemplification of detection by in situ and chromosomal hybridization (p.9, lines 3-17), TAJ allele-specific PCR amplification (p.12, lines 5-22), transcriptional reporter assay (p.10, lines 6-29), and immunocytochemistry (p.14, line 29 - p.15, line 5); see also p.17, lines 14-31. Step (b) involves no more than correlating the detected TAJ gene or gene product with an ectodermal disorder. In many cases, this entails no more than cross-referencing to a known clinical correlate. The specification describes alternative means to implement this step (p.6, lines 14-26) and teaches a large panel of TAJ genes and gene products associated with an ectodermal disorder (p.3, line 16 - p.4, line 3).

Both required steps of these TAJ detecting claims are thoroughly taught, described and exemplified, fully enabling one skilled in the art to practice the claimed invention without undue experimentation. Accordingly, in my expert opinion, the specification readily enables one of ordinary skill in the art to practice this two-step detection method as claimed without undue experimentation.

5. The TAJ modulating claims require contacting a cell with an agent which specifically binds and modulates the functional expression of a human TAJ gene or gene product, wherein (a) the cell is an ectodermal cell; or (b) the cell is a germ cell which gives rise to progeny ectodermal cells and further detecting the functional expression of the TAJ gene or gene product in the progeny cells.

The specification thoroughly teaches and exemplifies the method defined by these steps, readily enabling one of ordinary skill in the art to practice the method as claimed without undue experimentation. The specification explains how this method is implemented, including its application to germ cells which give rise to progeny ectodermal cells (p.6, line 29 - p.7, line 9), describes a variety of suitable TAJ binding and modulatory agents (p.7, lines 10-19), teaches a panel of exemplary agents shown to allele-specifically modulate functional expression of a TAJ gene or gene product (p.7, line 21 - p.8, line 18), describes how these agents are delivered to the cell (p.8, lines 20-30), and provides detailed exemplification of the method as applied to human keratinocytes in vitro and in vivo (Examples V and VI, p.12, line 24 - p.17, line 31).

The required step(s) of the TAJ modulating claims are thoroughly taught, described and exemplified, fully enabling one skilled in the art to practice the claimed invention without undue experimentation. Accordingly, in my expert opinion, the specification readily enables one of ordinary skill in the art to practice this modulation method as claimed without undue experimentation.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application and any patent issuing therefrom.

Date: Jan 10, 2001

Richard Gaynor, M.D.